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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,805	03/22/2004	Mark S. Manasse	MSFT-5031/307238.01	9958
41505 7590 08/10/2007 WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION) CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891			EXAMINER STACE, BRENT S	
			ART UNIT 2161	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/805,805

Applicant(s)

MANASSE, MARK S.

Examiner

Brent S. Stace

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. This communication is responsive to the amendment dated June 11th 2007. In the amendment dated June 11th 2007, Claims 1-22 are pending, Claims 1, 11, 14, 17, 21, and 22 are amended, and Claims 1, 11, 14, 17, 21, and 22 are independent Claims. The examiner acknowledges that no new matter was introduced and the amended claims are supported by the specification.

Response to Arguments

2. Applicant's arguments dated June 11th 2007 with respect to Claims 1-22 have been considered but are not persuasive.

3. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, teaching, suggestion, or motivation is found in knowledge generally available to one of ordinary skill in the art. As mentioned in the rejection below, using Sharangpani would offer "the obvious advantage of a reduced memory footprint (by using smaller (truncated)

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fingerprints/signatures)." One of ordinary skill in the art would know that truncating the bits from an array of bits results in a less number of bits that require storage in a computer. Therefore, truncation offers a reduced memory footprint for fingerprints/signatures.

4. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

5. As to Applicant's arguments with respect to Claims 1-22 for the prior art(s) allegedly not teaching or suggesting "wherein the number of bits of precision is reduced from a number of bits of precision used in the previous method, and wherein the number of bits of precision is reduced by generating supersamples that do not include at least one least significant bit of the supersamples used in the previous method," the examiner respectfully disagrees. As cited below, Sharangpani teaches truncating bits from an array of bit. This is reducing a number of bits of precision (used in a previous method). Also, the act of truncating is generating a new supersample (from Broder/Pugh). Sharangpani teaches that truncating occurs when rounding to zero. Truncating a couple bits from the right side (the lsb side) results in a rounding toward

zero as Sharangpani does. Although the limitation is unclear as explained above, this appears to fit at least one interpretation of "generating supersamples that do not include at least one least significant bit of the supersamples used in the previous method"

6. As to Applicant's arguments with respect to Claims 1-22 for the prior art(s) allegedly not teaching or suggesting "compressing each supersample to 16 bits of precision by recording the 16 most significant bits of the supersample," the examiner respectfully disagrees. The argument above applies to this response. Additionally, Powell explicitly teaches that 16 bit signatures/fingerprints are created (instead of just a reduced number of bits from the above argument). Again, since Sharangpani truncates toward zero (truncating lsb's), this results in msb's being recorded for the supersample.

7. Any other claims argued merely because of a dependency on a previously argued claim(s) in the arguments presented to the examiner, June 11th 2007, are moot in view of the examiner's interpretation of the claims and art and are still considered rejected based on their respective rejections from at least a prior Office action (part(s) of recited below).

Response to Amendment

Claim Rejections - 35 USC § 112

8. In light of the applicant's respective arguments or respective amendments, the previous 35 USC § 112 rejections to the claims have been withdrawn. However new 35 USC § 112 rejections are warranted by the amended claims.

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 1, 11, 14, 17, 21, and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1 and 17 recite "generating supersamples that do not include at least one least significant bit of the supersamples used in the previous method" in lines 12-13.

The examiner could find no support in the specification for including only a certain number of least significant bits to generate a new, reduced, supersample (if this is what the applicant's intend to claim, see further 112 second paragraph rejection below). The specification appears to only have support for generating a 16 bit supersample, for instance in published paragraph [0016]. The specification does not appear to give any significant detail on how a 16 bit supersample is generated from a 64 bit supersample (in the "previous method") let alone the detail on only using a part of the previous method's generated 64 bit supersample.

Claims 11, 14, 21, and 22 recite "recording the 16 most significant bits of the supersample" in lines 5-6. Again, the specification appears to have no support for recording 16 most significant bits for a supersample. The examiner can only find support for recording 16 bits for a supersample, not 16 most significant bits for a

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supersample. This rejection propagates downward through dependent Claims 2-10, 12, 13, 15, 16, and 18-20.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 17 have two different interpretations, therefore the claims are unclear. One interpretation is that the supersample is generated that does not include any one least significant bit (lsb) used in the previous method. Considering that the previous method was 64 bits, and the claims later state that this invention uses 16 bit supersamples (claim 6) it appears that the applicant intended this interpretation. For instance, in the diagram below indicating an array of bits, the bolded bits indicate bits that could be used to generate the supersample (other exemplary arrays exist, just as long as one lsb type is not included). Just as lsb indicates a least significant bit, msb indicates a most significant bit.

msb	msb	msb	msb	msb	msb	msb	msb	msb...	lsb
	&	&	&	&	&	&	&	&	
	lsb	lsb	lsb	lsb	lsb	lsb	lsb	lsb...	

The second interpretation of the limitation is that the supersample is generated that does not include even one least significant bit (lsb) used in the previous method. This essentially would mean, using the diagram above, that only the msb (only) bit can be used as the supersample. This interpretation would render exemplary Claim 6

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inoperable since the present invention's bit count for a supersample at Claim 6 would be 1 bit instead of the claimed 16 bits. When amended the claim, the examiner's informal, non-traditional language used in conveying the interpretations should not be used to amend the claims and the applicant is reminded to make sure support exists for future amendments.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1-5, 7-10, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,349,296 (Broder et al.) in view of U.S. Patent No. 6,058,410 (Sharangpani), further in view of U.S. Patent No. 6,658,423 (Pugh et al.).

For **Claim 1**, Broder teaches: "A method for detecting similar objects in a collection of such objects, [Broder, col. 4, lines 6-15 with Broder, Fig. 3] comprising, for each of two objects:

- modifying a previous method for detecting similar objects [Broder, col. 4, lines 6-15 with Broder, Fig. 3] wherein the modifying comprises:
- combining a number of samples of features into each of a total number of supersamples, [Broder, col. 7, lines 20-32 with Broder, Fig. 3]

- ...each of the total number of supersamples to a number of bits of precision, [Broder, col. 9, lines 11-15] and
- requiring a number of matching supersamples out of the total number of supersamples in order to conclude that the two objects are sufficiently similar” [Broder, col. 9, lines 1-3 with Broder, col. 9, lines 11-12 with Broder, col. 9, line 19].

Broder discloses the above limitations but does not expressly teach:

- “so that memory requirements are reduced
- while avoiding false detections approximately as well as in the previous method,
- wherein the number of samples is reduced from a number of samples used in the previous method;
- compressing...wherein the number of bits of precision is reduced from a number of bits of precision used in the previous method, and wherein the number of bits of precision is reduced by generating supersamples that do not include at least one least significant bit of the supersamples used in the previous method;
- wherein the number of matching supersamples is greater than a number of matching supersamples required in the previous method.”

With respect to Claim 1, an analogous art, Sharangpani, teaches:

- “so that memory requirements are reduced [Sharangpani, col. 1, lines 22-27 with Broder, col. 9, lines 11-15]
- compressing...wherein the number of bits of precision is reduced from a number of bits of precision used in the previous method, and wherein the number of bits

of precision is reduced by generating supersamples that do not include at least one least significant bit of the supersamples that were used in the previous method” [Sharangpani, col. 1, lines 22-27 with Broder, col. 9, lines 11-15].

With respect to Claim 1, an analogous art, Pugh, teaches:

- “while avoiding false detections approximately as well as in the previous method, [Pugh, col. 3, lines 35-43]
- wherein the number of samples is reduced from a number of samples used in the previous method; [Pugh, col. 9, lines 5-10 with Pugh, col. 9, lines 27-32 with Pugh, cols. 11-12, lines 65-3 with Broder, col. 5, lines 45-50 with Broder, col. 8, lines 62-67]
- wherein the number of matching supersamples is greater than a number of matching supersamples required in the previous method” [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 1-3 with Broder, col. 9, lines 11-12 with Broder, col. 9, line 19].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani and Pugh and Broder before him/her to combine Sharangpani and Pugh with Broder because the inventions are in the field of applicant’s endeavor or are reasonably pertinent to the particular problem with which the applicant is concerned.

Sharangpani and Pugh’s invention would have been expected to successfully work well with Broder’s invention because the inventions use computers and signatures/fingerprints with bits to detect duplicates. Broder discloses a (previous)

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method for clustering closely resembling data objects comprising samples, supersamples, and finding similar documents. However, Broder does not explicitly disclose a reduction in samples to form a supersample, reduction in bits of precision for the fingerprints, and a greater number of matching supersamples to have objects sufficiently similar. Sharangpani discloses a method and apparatus for selecting a rounding mode for a numeric operation comprising truncating (removing) any number of bits to a desired precision. Pugh discloses detecting duplicate and near-duplicate files comprising detecting duplicates using, essentially, any number of matching fingerprints where fingerprints are combined from, essentially, any number of samples.

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani and Pugh and Broder before him/her to take the removal/truncation of bits from Sharangpani, and the content of the fingerprints and matching requirements from Pugh and install them into the invention of Broder, thereby offering the obvious advantage of a reduced memory footprint (by using smaller (truncated) fingerprints/signatures) and having an reduced number of false positives.

Furthermore, it appears that the Applicant's claimed invention is a mere modification of numbers, parameters, and thresholds from the previous method. For instance, Broder, at the very least, teaches that other ranges of numbers, variables, parameters, and thresholds can be used in stating that certain numbers, variables, parameters, and thresholds were selected on an exemplary basis (Broder, col. 8, lines 62-67). As such, MPEP 2144.05 should be observed since the claimed invention appears that it is claiming an obvious optimization of ranges. Court cases of interest

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are *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382, *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969), *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), *cert. denied*, 493 U.S. 975 (1989), *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990), *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997), *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977), and *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 2 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 1 wherein requiring the number of matching supersamples comprises requiring all but one of the total number of supersamples to match" [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 1-3 with Broder, col. 9, lines 11-12 with Broder, col. 9, line 19].

Claim 3 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 1 wherein requiring the number of matching supersamples comprises requiring all but two of the total number of supersamples to match" [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 1-3 with Broder, col. 9, lines 11-12 with Broder, col. 9, line 19].

Claim 4 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 1 wherein requiring the number of matching supersamples comprises requiring all supersamples to match" [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 1-3 with Broder, col. 9, lines 11-12 with Broder, col. 9, line 19].

Claim 5 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 1 wherein combining the number of samples into each of the total number of supersamples comprises combining four samples into each of the total number of supersamples, [Pugh, col. 9, lines 5-10 with Pugh, col. 9, lines 27-32 with Pugh, cols. 11-12, lines 65-3] wherein the number of samples used in the previous method is 14" [Broder, col. 5, lines 45-50 with Broder, col. 8, lines 62-67].

Claim 7 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 5 wherein requiring the number of matching supersamples comprises requiring five supersamples of seven to match, [Pugh, col. 3, lines 35-43 with Pugh, cols. 11-12, lines 65-3 with Broder, col. 8, lines 62-67 with Broder, col. 9, lines 11-20] wherein the number of matching supersamples required in the previous method is two supersamples of six" [Broder, col. 9, lines 15-20].

Claim 8 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 1 wherein the objects are documents, [Broder, col. 11, lines 8-11 with Broder, col. 11, lines 19-28] and the method is used in association with a search engine query service to determine clusters of query results that are near-duplicate documents" [Broder, col. 11, lines 8-11 with Broder, col. 11, lines 19-28].

Claim 9 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 8, further comprising selecting a single document in each cluster to report" [Pugh, col. 10, lines 50-57 or Broder, col. 10, lines 15-18].

Claim 10 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 9 wherein selecting the single document is by way of a ranking function" [Pugh, col. 10, lines 50-57].

Claims 17-20 encompass substantially the same scope of the invention as that of Claims 1-4, respectfully, in addition to a computer-readable medium and some instructions for performing the method steps of Claims 1-4, respectfully. Therefore, Claims 17-20 are rejected for the same reasons as stated above with respect to Claims 1-4, respectfully.

15. Claims 6, 11-16, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,349,296 (Broder et al.) in view of U.S. Patent No. 6,058,410 (Sharangpani), in view of U.S. Patent No. 5,721,788 (Powell et al.), further in view of U.S. Patent No. 6,658,423 (Pugh et al.).

For **Claim 6**, Broder (as modified by Sharangpani and Pugh) teaches: "The method of claim 5 wherein:

- ...wherein the second number of bits of precision used in the previous method is 64; [Broder, col. 9, lines 11-15] and
- requiring the number of matching supersamples comprises requiring four supersamples of six to match, [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 11-20] wherein the number of matching supersamples required in the previous method is two supersamples of six" [Broder, col. 9, lines 15-20].

Broder (as modified by Sharangpani and Pugh) discloses the above limitations but does not expressly teach:

- "...compressing each supersample to the first number of bits of precision comprises recording each supersample to 16 bits of precision."

With respect to Claim 6, an analogous art, Powell, teaches:

- "...compressing each supersample to the first number of bits of precision comprises recording each supersample to 16 bits of precision" [Powell, col. 3, lines 35-48 with Sharangpani, col. 1, lines 22-27 with Broder, col. 9, lines 11-15].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Powell and Broder (as modified by Sharangpani and Pugh) before him/her to combine Powell with Broder (as modified by Sharangpani and Pugh) because both inventions are directed towards computing bits in a computer and are in the field of applicant's endeavor or are reasonably pertinent to the particular problem with which the applicant is concerned.

Powell's invention would have been expected to successfully work well with Broder (as modified by Sharangpani and Pugh)'s invention because both inventions use computers computing bits. Broder (as modified by Sharangpani and Pugh) discloses a fingerprint comprising 64-bits representing a fingerprint. However, Broder (as modified by Sharangpani and Pugh) does not expressly disclose using a 16-bit fingerprint to represent a fingerprint/supersample. Powell discloses a method and system for digital image signatures comprising reduced (16) bits of precision for a fingerprint/signature.

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Powell and Broder (as modified by Sharangpani and Pugh) before him/her to take the size of the fingerprints/signatures from Powell and install it into the invention of Broder (as modified by Sharangpani and Pugh), thereby offering the obvious advantage of a reduced memory footprint (by using smaller fingerprints/signatures) and having an reduced number of false positives.

For **Claim 11**, Broder teaches: "A method for determining groups of near-duplicate items [Broder, col. 4, lines 6-15 with Broder, Fig. 3] in a search engine query result, [Broder, col. 11, lines 8-11 with Broder, col. 11, lines 19-28] comprising, for each of two items being compared."

Broder discloses the above limitation but does not expressly teach:

- "combining four samples of features into each of six supersamples;
- compressing each supersample to 16 bits of precision by recording the 16 most significant bits of the supersample; and
- requiring four of the six supersamples to match."

With respect to Claim 11, an analogous art, Pugh, teaches:

- "combining four samples of features into each of six supersamples; [Pugh, col. 9, lines 29-31 with Pugh, cols. 11-12, lines 65-3 Broder, col. 9, lines 16-22]
- requiring four of the six supersamples to match" [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 11-20].

With respect to Claim 11, an analogous art, Powell, teaches:

- "...compressing each supersample to 16 bits of precision" [Powell, col. 3, lines 35-48].

With respect to Claim 11, an analogous art, Sharangpani, teaches:

- "...by recording the 16 most significant bits of the supersample" [Sharangpani, col. 1, lines 22-27 with Broder, col. 9, lines 11-15 with Powell, col. 3, lines 35-48].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani, Powell, and Pugh and Broder before him/her to combine Sharangpani, Powell, and Pugh with Broder because the inventions are in the field of applicant's endeavor or are reasonably pertinent to the particular problem with which the applicant is concerned.

Sharangpani, Powell, and Pugh's inventions would have been expected to successfully work well with Broder's invention because the inventions use computers and signatures/fingerprints with bits to detect duplicates. Broder discloses a (previous) method for clustering closely resembling data objects comprising samples, supersamples, and finding similar documents. However, Broder does not explicitly disclose a reduction in samples to form a supersample, reduction in bits of precision for the fingerprints, and a greater number of matching supersamples to have objects sufficiently similar. Sharangpani discloses a method and apparatus for selecting a rounding mode for a numeric operation comprising truncating (removing) any number of bits to a desired precision. Powell discloses a method and system for digital image signatures comprising reduced (16) bits of precision for a fingerprint. Pugh discloses detecting duplicate and near-duplicate files comprising detecting duplicates using,

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essentially, any number of matching fingerprints where fingerprints are combined from, essentially, any number of samples.

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani and Pugh and Broder before him/her to take the removal/truncation of bits from Sharangpani, the size of the fingerprints/signatures from Powell, and the content of the fingerprints and matching requirements from Pugh and install them into the invention of Broder, thereby offering the obvious advantage of a reduced memory footprint (by using smaller fingerprints/signatures) and having an reduced number of false positives.

Furthermore, it appears that the Applicant's claimed invention is a mere modification of numbers, parameters, and thresholds from Broder's method. For instance, Broder, at the very least, teaches that other ranges of numbers, variables, parameters, and thresholds can be used in stating that certain numbers, variables, parameters, and thresholds were selected on an exemplary basis (Broder, col. 8, lines 62-67). As such, MPEP 2144.05 should be observed since the claimed invention appears that it is claiming an obvious optimization of ranges. Court cases of interest are *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382, *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969), *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), *cert. denied*, 493 U.S. 975 (1989), *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990), *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed.

Cir. 1997), *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977), and *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 12 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 11, further comprising selecting a single document in each cluster to report" [Pugh, col. 10, lines 50-57 or Broder, col. 10, lines 15-18].

Claim 13 can be mapped to Broder (as modified by Sharangpani and Pugh) as follows: "The method of claim 12 wherein selecting the single document is by way of a ranking function" [Pugh, col. 10, lines 50-57].

For **Claim 14**, Broder teaches: "A method for determining groups of near-duplicate items [Broder, col. 4, lines 6-15 with Broder, Fig. 3] in a search engine query result, [Broder, col. 11, lines 8-11 with Broder, col. 11, lines 19-28] comprising, for each of two items being compared."

Broder discloses the above limitation but does not expressly teach:

- "...combining four samples of features into each of seven supersamples;
- compressing each supersample to 16 bits of precision by recording the 16 most significant bits of the supersample; and
- requiring five of the seven supersamples to match."

With respect to Claim 14, an analogous art, Pugh, teaches:

- "...combining four samples of features into each of seven supersamples; [Pugh, col. 9, lines 29-31 with Pugh, cols. 11-12, lines 65-3 Broder, col. 9, lines 16-22]
- "...requiring five of the seven supersamples to match" [Pugh, col. 3, lines 35-43 with Broder, col. 9, lines 11-20].

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With respect to Claim 14, an analogous art, Powell, teaches:

- "...compressing each supersample to 16 bits of precision" [Powell, col. 3, lines 35-48].

With respect to Claim 14, an analogous art, Sharangpani, teaches:

- "...by recording the 16 most significant bits of the supersample" [Sharangpani, col. 1, lines 22-27 with Broder, col. 9, lines 11-15 with Powell, col. 3, lines 35-48].

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani, Powell, and Pugh and Broder before him/her to combine Sharangpani, Powell, and Pugh with Broder because the inventions are in the field of applicant's endeavor or are reasonably pertinent to the particular problem with which the applicant is concerned.

Sharangpani, Powell, and Pugh's inventions would have been expected to successfully work well with Broder's invention because the inventions use computers and signatures/fingerprints with bits to detect duplicates. Broder discloses a (previous) method for clustering closely resembling data objects comprising samples, supersamples, and finding similar documents. However, Broder does not explicitly disclose a reduction in samples to form a supersample, reduction in bits of precision for the fingerprints, and a greater number of matching supersamples to have objects sufficiently similar. Sharangpani discloses a method and apparatus for selecting a rounding mode for a numeric operation comprising truncating (removing) any number of bits to a desired precision. Powell discloses a method and system for digital image signatures comprising reduced (16) bits of precision for a fingerprint. Pugh discloses

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detecting duplicate and near-duplicate files comprising detecting duplicates using, essentially, any number of matching fingerprints where fingerprints are combined from, essentially, any number of samples.

It would have been obvious to one of ordinary skill in the art at the time of invention having the teachings of Sharangpani and Pugh and Broder before him/her to take the removal/truncation of bits from Sharangpani, the size of the fingerprints/signatures from Powell, and the content of the fingerprints and matching requirements from Pugh and install them into the invention of Broder, thereby offering the obvious advantage of a reduced memory footprint (by using smaller fingerprints/signatures) and having an reduced number of false positives.

Furthermore, it appears that the Applicant's claimed invention is a mere modification of numbers, parameters, and thresholds from Broder's method. For instance, Broder, at the very least, teaches that other ranges of numbers, variables, parameters, and thresholds can be used in stating that certain numbers, variables, parameters, and thresholds were selected on an exemplary basis (Broder, col. 8, lines 62-67). As such, MPEP 2144.05 should be observed since the claimed invention appears that it is claiming an obvious optimization of ranges. Court cases of interest are *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955), *Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382, *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969), *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), *cert. denied*, 493 U.S. 975 (1989), *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990), *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed.

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Cir. 1997), *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977), and *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 15 and 16's limitation(s) have already been met by Claims 12 and 13's limitation(s), respectfully. Therefore, Claims 15 and 16 are rejected for the same reason(s) as stated above with respect to Claims 12 and 13, respectfully.

Claim 21 encompasses substantially the same scope of the invention as that of Claim 11, in addition to a computer-readable medium and some instructions for performing the method steps of Claim 11. Therefore, Claim 21 is rejected for the same reasons as stated above with respect to Claim 11.

Claim 22 encompasses substantially the same scope of the invention as that of Claim 14, in addition to a computer-readable medium and some instructions for performing the method steps of Claim 14. Therefore, Claim 22 is rejected for the same reasons as stated above with respect to Claim 14.

Conclusion

16. Any prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is advised that, although not used in the rejections above, prior art cited on any PTO-892 form and not relied upon is considered materially relevant to the applicant's claimed invention and/or portions of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brent S. Stace whose telephone number is 571-272-8372 and fax number is 571-273-8372. The examiner can normally be reached on M-F 9am-5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu M. Mofiz can be reached on 571-272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brent Stace *B.S.*

[Signature]
APU MOFIZ
SUPERVISORY PATENT EXAMINER

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